

Claims

1. In a telecommunications network including a circuit-switched network and a packet-switched network, a method of provisioning a gateway bridging calls between the circuit-switched network and the packet-switched network, said method comprising:

- (a) receiving a registration message from consumer premises equipment (CPE), the message including an address for the CPE on the packet-switched network;
- (b) determining a directory number (DN) for the CPE;
- 10 (c) placing a probe call to the determined DN over the circuit-switched network;
- (d) receiving a call from the circuit-switched network, said call being terminated at a call reference value (CRV);
- (e) recognizing the received call received from the circuit-switched network as the probe call;
- 15 (f) capturing the CRV at which the probe call is terminated; and,
- (g) associating the captured CRV with the address for the CPE.

2. The method of claim 1, further comprising:
providing a maintenance number (MN) for provisioning the gateway;
20 and,

step (b) includes receiving a DN identification call directed to the MN from the CPE, said DN identification call identifying the DN for the CPE.

3. The method of claim 1, wherein the registration message also includes an alias for the CPE, said alias including the DN for the CPE, and step
25 (b) includes:
extracting the DN for the CPE from the alias.

4. The method of claim 1, further comprising:
maintaining CRVs and addresses for CPE in a database such that the
CRVs and addresses for CPE in the database reference their associated
counterparts.
- 5 5. The method of claim 4, further comprising:
determining if the address for the CPE accompanying the registration
message is already associated with a CRV, such that if the address is not
already associated with a CRV then steps (b) – (g) are carried out, otherwise
steps (b) – (g) are omitted.
- 10 6. The method of claim 5, further comprising:
accessing the database to determine if the address for the CPE
accompanying the registration message is already associated with a CRV.
7. The method of claim 1, further comprising:
(h) storing the CRV and address for the CPE associated with one
15 another in step (g) in a database.
8. The method of claim 1, wherein the probe call placed in step (c)
originates from a maintenance number (MN), and step (e) includes:
using caller identification (ID) to obtain an originating number for the
received call; and,
20 comparing the obtained originating number with the MN, such that if the
obtained originating number and the MN substantially match one another, then
the received call is recognized as the probe call.
9. The method of claim 1, further comprising:
tagging the placed probe call with a detectable identifier; and,
25 step (e) includes monitoring calls coming into the gateway from the
circuit-switched network to detect the identifier, such that if identifier is
detected, then the received call is recognized as the probe call.

10. In a telecommunications network including a circuit-switched network and a packet-switched network, a gateway bridging calls between the circuit-switched network and the packet-switched network, said gateway comprising:

5 registration means for registering consumer premises equipment (CPE) with the gateway by receiving over the packet-switched network a registration message from the CPE, said registration message including an address for the CPE on the packet-switched network;

obtaining means for obtaining a directory number (DN) for the CPE;

10 calling means for placing a probe call to the obtained DN over the circuit-switched network;

reception means for receiving a call from the circuit-switched network, said call being terminated at a call reference value (CRV);

15 recognition means for recognizing the call received by the reception means as the probe call;

means for capturing the CRV at which the probe call is terminated; and,

means for associating the captured CRV with the address for the CPE.

11. The gateway of claim **10**, wherein the obtaining means is assigned a maintenance number (MN) for provisioning the gateway, said
20 obtaining means obtaining the DN for the CPE by receiving a DN identification call directed to the MN from the CPE, said DN identification call identifying the DN for the CPE.

12. The gateway of claim **10**, wherein the registration message also includes an alias for the CPE, said alias including the DN for the CPE, and said
25 obtaining means obtains the DN for the CPE by extracting the DN for the CPE from the alias.

13. The gateway of claim **10**, further comprising:
a database for storing and maintaining CRVs and addresses for CPE
such that the CRVs and addresses for CPE in the database reference their
30 associated counterparts.

14. The gateway of claim **13**, further comprising:

decision means for determining if the address for the CPE accompanying the registration message is already associated with a CRV.

15. The gateway of claim **14**, wherein the decision means accesses
5 the database to determine if the address for the CPE accompanying the registration message is already associated with a CRV.

16. The gateway of claim **10**, further comprising:

a database into which the CRV and address for the CPE associated therewith are stored.

17. The gateway of claim **10**, wherein the calling means is provided
10 with a maintenance number (MN), and the recognition means includes:

caller identification (ID), said caller ID obtaining an originating number for the call received by the reception means, said recognition means comparing the obtained originating number with the MN, such that if the obtained
15 originating number and the MN substantially match one another, then the call received by the reception means is recognized as the probe call.

18. The gateway of claim **10**, further comprising:

tagging means for tagging the probe call placed by the calling means with a detectable identifier, said recognition means monitoring calls coming into
20 the gateway from the circuit-switched network to detect the identifier, such that if identifier is detected, then the call received by the reception means is recognized as the probe call.

19. A gateway bridging calls between a circuit-switched network and a packet-switched network, said gateway serving a plurality of consumer
25 premises equipment (CPE) having addresses on the packet-switched network and said gateway being operatively connected to the circuit-switched network via a telecommunications switch that is part of the circuit switched network, said gateway comprising:

a database that relates a plurality of call reference values (CRV) to associated addresses of the CPE served by the gateway;

registration means for registering CPE with the gateway by receiving over the packet-switched network registration messages from the CPE, said
5 registration messages including addresses for the CPE on the packet-switched network; and,

provisioning means for automatically building and maintaining the database, said provisioning means acting to:

obtain directory numbers (DNs) for the CPE;

10 place probe calls to the obtained DN's over the circuit-switched network, each of said probe calls being routed by the telecommunications switch to be terminated on the gateway at a call reference value (CRV);

detect if calls incoming from the telecommunication switch
15 are probe calls;

capture the CRVs at which detected probe calls are terminated; and,

associate the captured CRVs with the addresses for the CPE, said associated CRVs and addresses being stored and
20 maintained in the database.

20. The gateway of claim 19, wherein the packet-switched network is an Internet protocol (IP) network.

21. The gateway of claim 19, wherein an interface is arranged between the gateway and the telecommunications switch thereby operatively
25 connecting them to one another such that from the perspective of the telecommunications switch the gateway appears to behave as a remote digital terminal.

22. The gateway of claim 21, wherein the telecommunications switch is a class 5 switch.

- 23.** The gateway of claim **22**, wherein the interface is a GR-303 interface.
- 24.** The gateway of claim **22**, wherein the interface is a V.5.2 interface.